Background

In 1997, the Environmental Protection Agency (EPA) revised the National Ambient Air Quality Standard (NAAQS) for Ozone from a one-hour standard to an 8-hour standard. This was done to reflect the latest understanding of the effects of ozone exposure and provide public health protection with adequate margin of safety. EPA will be designating areas as attainment (meeting the standard) or non-attainment (not meeting the standard) in April of 2004. This designation will be based on the most recent three years of monitoring data (i.e., 2001, 2002, 2003). The Department of Health and Environmental Control (DHEC) has an intensive monitoring network covering the state and routinely monitors for ozone during the months of April through October. This time period is often referred to as the "Ozone Season." If an area is designated non-attainment, the Clean Air Act (CAA) requires states to revise their State Implementation Plan (SIP) outlining how the area will return to attainment within a certain time period. If EPA designates areas in South Carolina as non-attainment in April of 2004, a revision to the South Carolina SIP will be due no later than 2007. Additionally, once an area is designated as non-attainment, the CAA has specific requirements that must be implemented. These requirements affect industry, economic development, and transportation. One requirement, Non-attainment New Source Review sets out the level of emissions reductions required for new and modified industrial facilities. Another requirement of non-attainment areas is to coordinate local transportation and air quality planning to ensure that transportation plans, programs and projects are consistent with air quality goals. According to the CAA, transportation plans, programs, and projects cannot create new violations of the Federal air quality standards; increase the frequency or severity of existing violations of the standard; or, delay attainment of standards.

The above approach is commonly referred to as the "traditional" approach. While safeguards for areas to return to attainment are included, certain prescriptive requirements may not be appropriate for all areas designated non-attainment for the 8-hour ozone standard. As a result, EPA provided an option for areas that were meeting the one-hour standard to attain the 8-hour ozone standard by December 31, 2007, and obtain cleaner air sooner than currently federally mandated. This option offers a more expeditious time frame for achieving emissions reductions, while providing "fail-safe" provisions for the area to revert to the traditional SIP process if specific milestones are not met. EPA will move forward with the designation process (attainment or non-attainment) but will defer the effective date, thus the prescriptive requirements of non-attainment designations, provided all terms and conditions of an Early Action Compact (EAC) are being met.

Forty-five counties in South Carolina elected to participate in the development of an Early Action State Implementation Plan (EAP). Participants in the EAC include the county, DHEC and the EPA. All of these parties agree to work together to implement federal, state and local emissions control measures that will allow the non-attainment areas to attain the 8-hour ozone standard earlier and therefore avoid implementing costly prescriptive measures. The EAC requires that all counties submit a local Early Action Plan to DHEC by March 31, 2004.

Anderson County is a potential area to be designated non-attainment for the 8-hour ozone standard, as are other areas in South Carolina. As air knows no boundaries, implementation of emission reduction strategies and support of federal and state rules and regulations will help to provide cleaner air sooner to citizens of South Carolina.

What is Ozone?

Ozone is a gas that occurs both in the Earth's upper atmosphere and at ground level. Ozone is one of six criteria pollutants used by the EPA as an indicator of air quality. Depending on where ozone is found, it can

be good or bad. Occurring naturally in the upper atmosphere, ozone acts as a shield from the sun's harmful ultraviolet rays. However, ground-level ozone is a concern during the summer months when the weather conditions are favorable for producing ozone. Ozone is formed by chemical reactions between volatile organic compounds (VOCs) and oxides of nitrogen (NOx) in the presence of sunlight. Ozone is a major ingredient of smog.

Ozone Health Effects

Ozone can cause permanent damage to the respiratory system. Active children are at highest risk from ozone exposure because they often spend a large amount of time outdoors. Active adults of all ages who exercise or work outdoors have an increased risk of exposure to elevated levels of ozone. People with asthma or other respiratory diseases are particularly sensitive to ozone exposure.

Sources of NOx and VOCs

NOx and VOCs come from emissions from the following sources: stationary, area, mobile and natural. Stationary sources include larger permitted industry and power plants. Area sources are small, stationary and non-transportation sources that collectively contribute to air pollution. Area sources include gas stations (emit NOx) and dry-cleaners (emit VOCs). Mobile sources are divided into two categories, on-road and off-road. The off-road mobile sources include trains, ships, boats, airplanes, lawn equipment, and construction equipment. On-road mobile sources include cars, trucks, and buses. Natural sources for VOCs are released from vegetation, mostly trees in South Carolina. Natural sources for NOx are very rare and include emissions from soil, lightning, and oceans.

Stakeholder Involvement

Refer to the progress reports submitted every six months for information regarding the stakeholder process and a complete listing of the stakeholder meetings and public outreach initiatives.

Emission Reduction Strategies

Through the development and implementation of this plan, local emission reduction strategies that are economically feasible and that make sense for the county will be implemented no later than April 2005. In doing so, these efforts should assist the state in achieving the 8-hour ozone standard by December 31, 2007, and maintaining the standard beyond 2012.

A number of federal control measures are in place and/or will be phased in over the next several years. These programs include the Tier II and Low Sulfur Gasoline and also the NOx SIP call. All of these programs have been developed to help areas attain air quality standards.

The state is also proposing new and/or modifications to regulations that will assist non-attainment areas. The State programs could include a regulation that would result in VOC and NOx reductions; modifications to the open burning regulations and a process to assure transportation plans, programs, and projects consider air quality goals.

Attachment 1 contains a list of emission reduction strategies that will be implemented by the county. While it may not be possible to determine emissions reductions for each of the strategies included, directionally

sound strategies have been selected and the county anticipates the cumulative impact of adopting each of these strategies will assist in maintaining the standard.

Maintenance

The county will continue to address strategies that will assist in long-term maintenance of the 8-hour ozone standard. DHEC will continue to provide the air quality monitoring necessary to determine attainment of the 8-hour ozone standard. Yearly, at the end of each ozone season, there will be a review and evaluation to determine the effectiveness of the strategies adopted. If necessary, additional emission reduction strategies may be adopted. Maintenance of the standard will depend upon the success of emission reduction strategies implemented as well as federal and state initiatives.

Early Action Compact – List of Possible Emission Reduction Strategies Under Consideration
Upstate Counties of Anderson, Greenville, and Spartanburg (South Carolina)
Adopted by the Upstate Air Quality Steering Committee on December 2, 2003

Based on stakeholder consultation and taking into consideration resource and political constraints, the following control measures are under consideration pending modeling that demonstrates compliance in 2007 by SCDHEC. It is anticipated these measures under consideration will assist the County of Anderson, Greenville, Spartanburg, South Carolina, in achieving and/or maintaining the 8-hour ozone standard by 2007.

Measure under Consideration	Detailed description of measure	Current assessment of emission reductions	Proposed Date for Implementation	Geographic Area and/or Local Government
1. Support SCDHEC statewide efforts to reduce ozone levels. Priority A	?? Develop stakeholder group to support and participate in modeling efforts. ?? Develop stakeholder group to participate in development of regulations (NOx – BACT (Best Available Control Technology Economically Achievable), restrict open burning).	Equivalent to removing 359,500 cars from the road or 7190 tons of VOC	Ongoing	Area: Countywide. Agency: SCDHEC, local governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
2. Designate an Ozone Action Coordinator Priority A	?? Designate a staff person in each County who will be responsible for coordination of counties ozone programs.	Not applicable.	March 2003	Area: Countywide. Agency: local governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
3. Seek low sulfur fuels as early as possible. Priority A	?? Continue to coordinate with representatives of Colonial and Plantation pipelines, refiners, and State representatives to ensure that the upstate has the opportunity to receive low sulfur fuels at the earliest date as they can be provided.		Ongoing	Area: Countywide Agency: local governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
4. Design and implement congestion management and Intelligent Transportation System (ITS) measures. Priority A	?? Implement congestion management projects: intersection and signalization improvements to alleviate traffic congestion, therefore, reducing emissions from idling vehicles; ?? Implement Intelligent Traffic Systems such as automated advisory/alert messages to drivers on interstate highways. For example: advise motorist about an accident ahead and the use of alternate routes to avoid congestion, which minimize emissions from idle vehicles. ?? Encourage and support improved traffic operational planning, engineering and maintenance for existing and future transportation infrastructure.		2003 and ongoing	Area: Cities and Counties major corridors. Agency: GRATS, SPATS, and ANATS.

Measure under Consideration	Detailed description of measure	Current assessment of emission reductions	Proposed Date for Implementation	Geographic Area and/or Local Government
5. Use of hybrid vehicles. Priority A	?? Encourage people, public and private organizations to purchase hybrid vehicles as they replace vehicles/fleet ?? Encourage that 10% of public agencies fleet have hybrid vehicles (use of hybrid vehicles does not require changes in infrastructure for dispensing fuel). ?? Encourage public agencies to require purchasing hybrid electric vehicles (HEVs) through the State vehicle contract.		Counties: 2004-2005. Other local governments as soon as practical.	Area: countywide. Agency: local governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
6. Use higher efficiency engines for school buses. Priority A	?? Require purchase of high efficiency engines for school buses as they are replaced. In South Carolina, the SC Department of Education is in charge of maintenance of school buses. DHEC is working with SC Department of Education to obtain grants from EPA. ?? Promote an Adopt-a-School-Bus program. ?? Endorse a statewide recommendation for the State to take the lead.		As soon as practical.	Area: countywide. Agency: State and local governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
7a. Develop incentive programs and opportunity for citizens to choose alternative transportation modes. Establish intermodal connections with an emphasis on mass transit.. Priority A	WALKING/BIKING: ?? Encourage local government to increase pedestrian/bicycle infrastructure spending (the Upstate spends 2¢ per person compared to SC spending 22¢ per person). ?? Establish safer bike routes with better signs marking lanes and routes. ?? Increase highway funding for bike paths, walking or mass transit including high-speed rail. Support the federal transportation enhancement program. ?? Install bike racks on all transit vehicles to encourage intermodal transportation. New buses purchased through the state's bus purchase program will have bike racks. PARK and RIDE: ?? Establish mass transportation between a plant and a park-and-ride site. CARPOOLING: ?? Work with local government to offer incentives for		2004	Area: Multi-County. Agency: Related agencies.

	employees to car pool. MASS TRANSIT: ?? Offer a free trolley service running in a loop in downtown areas and nearby restaurants, especially during lunch hours; ?? Research past feasibility studies on free downtown shuttles. Potential for sponsorship with local area restaurants and businesses for a lunch time shuttle - could defer the operational costs of the endeavor. ?? Support mass transit (transportation choices and alternatives): While the only local mass transit choice that is currently available in some areas is the transit bus, example of future options such as bus rapid transit, commuter passenger service offered by trains on existing rail systems, a diesel multiple unit or "light rail" should be supported.			
7b. Offer free or reduced transportation cost on high ozone days. Priority A	MASS TRANSIT: ?? Implement a coordinated high ozone day alert action plan to include public notification and free or reduced ozone fares from the transportation providers.		2004	Area: Multi-County. Agency: local transit providers and related agencies.
7c. Reduce vehicle miles traveled by developing efficient user-friendly transit systems. Priority A	?? Integrate transportation planning with land use planning so public transit can make a comprehensive contribution to economic development and mobility; ?? Remove local barriers to densification in downtowns, infill areas, and transit stations and corridors.		2004	Area: Countywide. Agency: local transit authorities.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
8. Review and update air emission inventory for the Upstate. Priority A	?? Ensure all industrial sources still operating. Review industrial sources for plant closures. ?? Identify major sources of NOx. ?? Map the locations of point sources (10% of point sources cannot be found). ?? Map the specific locations and the area sources where coal is burned.	**NO_X:** Over 1,000 tpy of NO_X emissions (possibly as much as 3,156 tpy) may be overstated in the Upstate area source emission inventory. **VOC:** Over 7,000 tpy of VOC emissions (possibly as much as 20,191 tpy) may be overstated in the Upstate area source emission inventory.	Fall 2003 Prior to final Urban Airshed Model runs	Area: Countywide. Agency: SCDHEC.

Measure under Consideration	Detailed description of measure	Current assessment of emission reductions	Proposed Date for Implementation	Geographic Area and/or Local Government
9. Support SCDHEC in evaluating and seeking reductions from major sources based on modeling. Priority A	?? Coordinate with Duke Power to determine what NOx reductions are planned for the Lee Steam Plant. ?? Coordinate with the Williams Company to determine what NOx reductions are planned for the Transco Pipeline. ?? Support NOx reduction strategies in the State Implementation Plan. ?? Develop an Early Reduction Program with incentives for industrial facility (Tier Two Type emission NOx sources)	2,000-4,000 tpy NOx from SIP Call Potential 500-1000 tpy NOx (Tier Two)	2005	Area: Countywide. Agency: local governments, Chambers of Commerce, utilities, business and industry.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
10. Develop a program to offer to purchase or repair smoking vehicles (known as cash for clunkers). Priority A	?? Use funds generated from a license plate sales, registration fees, or license plate tax program to buy or repair high emitting vehicles from individuals. ?? Purchase such vehicles from non-profit groups such as the Kidney Foundation, Goodwill, Salvation Army when they have been donated as charitable gifts. ?? Consider accelerated vehicle retirement (scrappage) programs to encourage vehicle owners to voluntarily retire their vehicles sooner than they would have otherwise.		2005	Area: countywide. Agency: local governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
11. Ban open burning of on-site commercial clearing debris during ozone season (April to October). Priority A	?? Use SCDHEC model to determine the most effective method to ban open burning. ?? Discuss modeling results with all local governments to consider adoption.		2004	Area: countywide. Agency: SCDHEC and local governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
12. Create incentives for the purchase of high efficiency and low emissions vehicles. Priority A	?? Offer tax credits for vehicles with high efficiency gas consumption or low emissions. ?? Offer tax credits for low mileage vehicles instead of high mileage vehicles.		2005	Area: Statewide. Agency: State and county governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
13. Use land-use and transportation planning to improve air quality. Priority A	?? Include air quality measures as a part of the land-use and transportation planning process.		2004	Area: countywide. Agency: local governments.

Measure under Consideration	Detailed description of measure	Current assessment of emission reductions	Proposed Date for Implementation	Geographic Area and/or Local Government
14. Implement a program to encourage use of green power. Priority A	?? Capture emissions from landfills to produce green power, e.g., BMW is utilizing Palmetto Landfill emissions to produce energy for its plant. ?? Implement a Purchase Green Power program when available. Green power is electricity generated by renewable resources like solar, wind, and even decomposing garbage in selected landfills. These resources are replenished naturally and minimize harm to the environment.		2004	Area: countywide. Agency: local governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
15. Promote route efficiency for delivery vehicles, trash collection etc. Priority A	?? Encourage business to consolidate distribution and collection routes to improve efficiency and reduce emissions from their fleets. ?? Maximize route efficiency for public services such as garbage collection, delivery vehicles, and other vehicle trips to reduce fuel usage.		2004	Area: countywide. Agency: Chambers of Commerce
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
16. Establish a clean air partnership with business and industry. Priority A	?? Encourage and coordinate alternate work schedules such as staggered work hours for business, industry and local governments. ?? Establish park and ride lots serving perimeter counties along major corridors. ?? Make the public aware of the park-and-ride concept: media could assist in publicizing which programs are available. ?? Encourage carpooling/vanpooling as an option where employees living in the same area agree to ride to work together rather than to drive their individual vehicles to work. ?? Consider parking facility controls that can include employers offering a tax-free transit/vanpool benefits and which limit the amount of parking and encourage carpooling, mass transit, etc. ?? Encourage telecommuting. ?? Adopt a Bus Program. ?? Develop funding to be used for matching grants fund for several EAP Strategies. ?? Develop a core competency and assisting the Upstate EAP group in writing grant proposal	Significant in the area of grants and local non-local tax funds generation.	2004	Area: countywide. Agency: local governments, local business, and Chambers of Commerce.

Measure under Consideration	Detailed description of measure	Current assessment of emission reductions	Proposed Date for Implementation	Geographic Area and/or Local Government
17. Establish an active public awareness campaign. Priority A	?? Develop an editorial board to discuss air quality issues and development of a relationship with media. o Use alert messages year round, not only during ozone season. o Utilize public service announcements, newspapers, weather channels, and other media outlets to notify citizens of high ozone days. o Utilize TV Channels to issue high ozone alerts using the crawl bar at bottom of TV screens. ?? Encourage health organizations to sponsor ozone alerts in media. ?? Enhance ozone awareness (Outreach - Communication): assign a local agency to develop and implement a program to educate and motivate individuals to take actions to minimize ozone pollution. Includes a focused distribution of educational materials, dissemination of SCDHEC ground-level ozone forecast, increased media alerts to specific audiences, and includes action oriented components (i.e. ridesharing, telecommuting, etc.). ?? Develop a campaign to encourage things such as refueling vehicles during evenings, not topping off tanks when refueling, using lawnmowers during evenings instead of during high ozone hours, using of electric lawn mowers. ?? Develop a license plate program to generate revenue to implement the public awareness campaign. ?? Develop awareness program on tax savings for purchasing high efficiency vehicles.		2004	Area: countywide. Agency: local governments, local media, health organizations, and Chambers of Commerce.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
18. Promote research in energy efficiency at local universities, industries, energy companies, federal government, and other institutions that improve air quality. Priority A	?? Establish programs to research energy efficiencies at local universities, e.g., Institute for Energy Studies at Clemson University. ?? Encourage business and industry to utilize the research from these programs to make the best decision concerning the purchase or upgrade of furnaces and boilers.		2005	/agency: local universities.

	?? Encourage fuel cell and other hydrogen based research.			
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
19. Use of alternate fuels. Priority B	?? Direct local Planning Commissions to identify areas where alternative fuels will be best suited. ?? Encourage the use of alternate fuels; ?? Assist with establishing alternative fuel infrastructure for private sector clean fuel fleets. Fuels other than gasoline and diesel that are used to power on-road vehicles. Examples of alternate fuels include bio-diesel, electricity, ethanol, hydrogen, liquefied petroleum gas, methanol, and natural gas. ?? Assist with establishing alternative fuels for public fleets. Fuels other than gasoline and diesel that are used to power on-road vehicles. Examples of alternate fuels include bio-diesel, electricity, ethanol, hydrogen, liquefied petroleum gas, methanol, and natural gas. ?? Encourage a clean-fuel fleet program for centrally fueled fleets of more than 10 vehicles		Ongoing	Area: Countywide. Agency: local businesses and local governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
20. Evaluate the use of High Occupancy Vehicle (HOV) lanes using existing lanes. Priority B	?? Evaluate use of HOV on three (3) lane interstate highways; ?? Show the advantages of designating HOVs; ?? Pass laws establishing regulations on HOVs lanes such as the threshold in the number of passengers (perhaps two) in the vehicle using HOVs lanes and time of day for the lane to be designated as HOV (rush hour). ?? Pass laws authorizing issuance of tickets for violations of HOVs lanes regulations, i.e., one-passenger vehicles using HOV lanes on designated hours.		2005	Area: Interstate limited access highways. Agency: SCDOT and SCDHEC.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
21. Modify speed limits for optimum fuel efficiency. Priority B	?? Direct SCDHEC and SCDOT to take the lead role. ?? Direct Planning Commissions to assist SCDHEC in modeling.		2005 or 2006	Area: Interstate highways. Agency: State Legislature and SCDOT.

Measure under Consideration	Detailed description of measure	Current assessment of emission reductions	Proposed Date for Implementation	Geographic Area and/or Local Government
22. Develop process for evaluating and minimizing impact of major projects such as shopping centers, schools, and subdivisions. Priority B	?? Study impact of post construction traffic flow. ?? Study impact of construction activities.		2004	Area: countywide. Agency: local governments.
Measure under Consideration	**Detailed description of measure**	**Current assessment of emission reductions**	**Proposed Date for Implementation**	**Geographic Area and/or Local Government**
23. Community Schools to reduce vehicle miles traveled and encourage biking and walking for students and parents by encouraging smaller community-based schools that are integrated into neighborhoods Priority B	?? Eliminate minimum acreage requirements for school sites. ?? Cap student populations per facilities. ?? Require coordination among school boards and local governments to plan school sites and avoid conflicts with local planning goals. ?? Favor restoration and construction of community-based small schools over new construction of remote mega schools.			Area: countywide. Agency: local governments, planning commissions, and school boards.